

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A gas concentrator, which produces concentrated gas by applying a pressure difference to adsorbent having selective adsorption property to specific gas from mixed gas and by separating the specific gas, comprising:

a filter for filtering out impurities from the mixed gas;

a plurality of adsorption beds containing the adsorbent for separating the specific gas from the mixed gas supplied via the filter;

~~and including a backflow prevention means formed on channels through which the separated gas in the adsorption beds is discharged; is discharged therefrom;~~

a small-diameter pipe for interconnecting the channels at production stages ends of the adsorption beds with each other to perform processes of cleaning and applying vacuum pressure to the adsorption ~~beds;~~ beds, the small-diameter pipe having a diameter smaller than a diameter of the channels;

a vacuum pumping means connected to a channel for supplying the mixed gas to the adsorption beds, the vacuum pumping means generating the pressure difference caused from a difference between the a vacuum pressure and a pressure of the mixed gas;

a valve means comprising a channel base of a single body formed with channels respectively connected to the adsorption beds, ~~at the channel connected to a for mixed gas~~ supplying ~~channel, the mixed gas, and a channel connected to~~ the vacuum pumping means, and solenoid drivers mounted in the channel base for switching the channels formed in the channel base in order to alternately apply the vacuum pressure and the pressure of the mixed gas to the adsorption beds; and

a gas supplying means for supplying a target space with the gas which flow rate and concentration are controlled by controllably supplying the mixed gas supplied from the filter to the gas separated and produced ~~in from~~ the adsorption ~~beds, beds and then supplying a target space with the gas of which flow rate and concentration is controlled.~~

wherein the channel base of the valve means, which is formed in the single body formed with the channels, is formed with mounting portions for mounting the solenoid drivers, bed

connecting portions to be connected to the adsorption beds, and a channel connecting portion to be connected to the mixed gas supplying channel,

wherein each of the solenoid drivers of the valve means comprises a frame for supporting the whole of the solenoid driver, a coil housed in the frame for providing a motive force by a supplied current, a plunger for opening and closing the channel through its reciprocation by the motive force of the coil, guide pipe for guiding the plunger, and a pumping means connecting portion extended on the guide pipe,

wherein each of the solenoid drivers is divided from one other by a partition,

and wherein the bed connecting portions are communicated with the channel connecting portion when the pumping means connecting portion is closed by the plunger of the solenoid drivers, and the bed connecting portions are communicated with the pumping means connecting portion when the pumping means connecting portion is opened by the plunger of the solenoid drivers.

2. – 4. (Canceled)

5. (Currently Amended) The gas concentrator as claimed in claim 1, any one of claims 1 to 3, wherein the backflow prevention means formed on the respective channels for discharging the gas separated ~~in from~~ the adsorption beds ~~are~~ is a check valve-valves on flow rate reduction pipes having diameters smaller than a diameter of the channels so as to increase flow resistance and reduce flow rate. ~~or small flow rate reduction pipe with flow resistance.~~

6. (Currently Amended) The gas concentrator as claimed in claim 5, wherein each of the check valve-valves comprises an outer guide formed on the ~~channel; channels;~~ a check plunger inserted in the outer ~~guide; guide and provided with a channel in~~ a body of the check ~~plunger; plunger being formed with the channel;~~ a sealing damper attached to the check plunger so as to be in close contact with an inlet of the outer guide of a portion where the gas flows in; and a supporting spring positioned at an outlet of the outer guide of a portion where the gas is discharged to support the check plunger.

7. (Original) The gas concentrator as claimed in claim 1, wherein a sealing means for preventing backflow of the discharged gas separated and discharged from the adsorption beds and simultaneously blocking off external air is installed on the channel.

8. (Original) The gas concentrator as claimed in claim 1, wherein a sealing means for blocking off external air is installed on a suction or discharge channel of the vacuum pumping means.

9. (Currently Amended) The gas concentrator as claimed in claim 7 or 8, wherein the sealing means is a check valve-type.

10. (Currently Amended) The gas concentrator as claimed in ~~any one of claims 1 to 3~~ claim 1, wherein in order to supply the target space with the gas which flow rate and concentration are controlled, the gas supplying means cooperates with a flow rate control means ~~supplies the target space with the gas of which the flow rate and concentration is controlled by using a flow rate control means~~ installed on a channel for controlling flow rate of the gas discharged through the adsorption beds and a flow rate control means installed on a channel for supplying the mixed gas which has not passed through the adsorption beds.